

## WHAT IS CLAIMED IS:

1. A method for controlling an unmanned vehicle ("UV") with a state machine on said UV, said method comprising:

5                     entering a state of said state machine;  
receiving an input on said UV;  
evaluating a condition of a rule  
corresponding to said state using said input;  
10                  performing at least one action  
corresponding to said rule based on a result of said  
evaluating; and  
                       modifying said state machine.

2. The method of claim 1 wherein said modifying is responsive to said performing at least one action.

3. The method of claim 1 wherein said modifying alters a transition of said state machine.

4. The method of claim 1 wherein said modifying alters a rule of a state of said state machine.

5. The method of claim 4 wherein said altering said rule comprises altering a condition of said rule.

6. The method of claim 1 wherein said performing at least one action comprises altering navigation of said UV.

7. The method of claim 6 wherein said altering navigation comprises rotating a servo of said UV.

8. The method of claim 1 wherein said receiving of said input comprises receiving data from a sensor mounted on said UV.

9. The method of claim 8 wherein said sensor is configured to measure the status of onboard equipment on said UV.

10. The method of claim 8 wherein said data comprise data indicative of a position of said UV.

11. The method of claim 1 wherein said receiving of said input comprises receiving data from a camera mounted on said UV.

12. The method of claim 11 further comprising transmitting said data from said camera to a ground station.

13. The method of claim 1 wherein said performing at least one action comprises setting a second input.

14. The method of claim 13 further comprising evaluating a condition of a second rule using said second input.

15. A method for managing a first participant in a network of unmanned vehicles ("UVs") and ground stations, wherein said network includes at least one other participant, said method comprising:

5                    maintaining first state information about said first participant;

                      transmitting an update of said first state information to said at least one other participant;

10                  maintaining second state information about said at least one other participant; and

receiving an update of said second state information from said at least one other participant.

16. The method of claim 15 wherein:

said first state information includes information received from a sensor mounted on said first participant; and

5 said second state information includes information received from a sensor mounted on said at least one other participant.

17. The method of claim 15 wherein:

said first state information includes information about a mission status of said first participant; and

5 said second state information includes information about a mission status of said at least one other participant.

18. The method of claim 15 further comprising sending a command to one of said at least one other participant.

19. The method of claim 18 wherein said command affects navigation of said one of said at least one other participant.

20. The method of claim 15 wherein said transmitting said update comprises:

5 determining a probability that said update will experience interference from one of said at least one other participant in a channel;

comparing a quantity based on said probability to a threshold; and

transmitting in said channel when said quantity is less than said threshold.

21. The method of claim 20 wherein said threshold is based on a message indicative of whether

said one of said at least one other participant will transmit during said channel.

22. The method of claim 20 wherein said determining a probability comprises determining an urgency of a message from said one of said at least one other participant.

23. A system for controlling an unmanned vehicle ("UV") with a state machine on said UV, said system comprising:

- 5 a sensor mounted on said UV;
- a controller module mounted on said UV and coupled to said sensor;
- a junction mounted on said UV coupled to said sensor and said controller module; and
- 10 a command unit mounted on said UV and coupled to said junction, wherein:
  - 10 said command unit is configured to control said UV using said controller module based on information from said sensor.

24. The system of claim 23 wherein said command unit is configured to execute a state machine that is responsive to information from said sensor.

25. The system of claim 24 wherein said state machine can modify itself responsive to information from said sensor.

26. The system of claim 23 further comprising a second participant coupled to said junction through a primary channel and coupled to said controller module through a secondary channel.

27. The system of claim 26 wherein said second participant comprises a UV.

28. The system of claim 26 wherein said second participant comprises a ground station.

29. The system of claim 26 wherein said command unit is configured to communicate with said second participant through said junction and said primary channel.

30. The system of claim 29 wherein said command unit is configured to communicate with said second participant through said junction, said controller module, and said secondary channel when said 5 primary channel is disabled.

31. The system of claim 29 wherein said second participant stores information based on information stored on said command module.

32. The system of claim 31 wherein said information stored on said second participant is configured to control said UV using said controller module based on information from said sensor when said 5 command unit is disabled.

33. A method of communicating between a first sender and a recipient, said method comprising:  
determining a probability that a communication from a second sender will interfere with  
5 a communication from said first sender to said recipient in a channel;  
comparing a quantity derived from said probability to a threshold; and  
communicating between said first sender  
10 and said recipient in said channel based on a comparison of said derived quantity to said threshold.

34. The method of claim 33 wherein said determining said probability comprises determining a position of said second sender.

35. The method of claim 33 wherein said determining said probability comprises determining whether said second sender intends to communicate in said channel.

36. The method of claim 33 wherein said determining said probability comprises determining a message urgency of said second sender.

37. The method of claim 33 further comprising:

determining that said communicating from said first sender to said recipient is of a relatively high urgency; and

using a channel assigned to said first sender to perform said communicating.

38. The method of claim 33 wherein:  
said channel is assigned to a sender;  
and

said determining a probability comprises determining whether said channel is assigned to said second sender.

39. The method of claim 38 wherein:  
said probability is set to a first value when said channel is assigned to said second sender;  
and

said probability is set to a second value when said time slice is not assigned to said second sender.

40. The method of claim 33 wherein said channel comprises a time slice.

41. The method of claim 33 wherein said channel comprises a frequency.

42. The method of claim 33 wherein said channel comprises a set of frequencies whose selection is based on a correlation code.

43. The method of claim 33 wherein:  
said channel comprises a time slice;  
said communicating occurs at least one frequency; and

5                   said at least one frequency is selected based on a correlation code.

44. A system for controlling an unmanned vehicle ("UV") with a state machine on said UV, said system comprising:

5                   means for entering a state of said state machine;

                  means for receiving an input on said UV;  
                  means for evaluating a condition of a rule corresponding to said state using said input;

10                  means for performing at least one action corresponding to said rule based on a result of said evaluating; and

                  means for modifying said state machine.

45. A system for managing a first participant in a network of unmanned vehicles ("UVs") and ground stations, wherein said network includes at least one other participant, said method comprising:

5                   means for maintaining first state information about said first participant;

                  means for transmitting an update of said first state information to said at least one other participant;

10                  means for maintaining second state information about said at least one other participant;

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and

means for receiving an update of said  
second state information from said at least one other  
15 participant.